

# RIGHT SELECTION, SOME TLC HELP TREES SURVIVE WYOMING'S HARSH WINTER

There are still signs of weather damage in trees from the November 2014 “polar vortex” that enveloped a six-state area.

Temperatures dropped significantly in a short time. In Casper, the temperature reached 60 degrees November 10 and then dropped to minus 27 degrees by the night of November 12: an 87-degree drop.

Early- and late-season temperature drops can have devastating and long-lasting effects on trees that have not hardened-off. Unfortunately, there is not much that can be done after an extreme weather event like a polar vortex, only wait and see how the tree reacts. The full extent of the damage may not be seen for several years.

## What to look for

**Frost cracks** – also known as radial shakes, are the most common signs of damage homeowners will see in a flash freeze. The outer bark contracts faster than the inner bark creating a vertical split typically seen on the southern-exposed side of the trunk. The bark may also become completely girdled, which will kill the tree. You may also notice dieback from the outside of a plant progressing inward and sometimes blackened leaves and stems will be seen. These branches will not regenerate. Recommendations are to have them pruned out as they may become a safety hazard depending on their size and location.

Hardening-off is the physiological process of deciduous trees, such as cottonwood and ash trees, becoming dormant for the winter. Trees are photoperiodic and respond when the day length shortens and temperatures start cooling, triggering the hardening-off process. Water and sugars get drawn out from the leaves and when a quick freeze occurs before hardening off is complete, the tree may still have water in the cells where ice crystals form, resulting in cell death.

**Sunscald** – Another type of winter injury, even without a cold snap.

Thin-barked trees such as maple, crabapple, cherries, and lindens are more susceptible to freeze/thaw situations where the sun warms the south-facing side of the trunk and then cools quickly once the sun goes down. The bark can then crack, causing similar injury to that described above. This type of injury can be avoided by selecting trees (or varieties of trees) that don't have thin bark. If you already have such trees or would like to grow them despite this characteristic, wrapping the trunk with tree wrap material during the dormant season will help reflect light away from the trunk and reduce the rising temperatures. Remove the wrapping in spring.

The best way to avoid winter injury is to select hardy species and cultivars (especially those that

come from a seed source from a similar climate). Pick species with a cold-hardiness rating matching your area. Wyoming has a range of cold-hardiness zones from a USDA Zone 3 to 5b depending on elevation and location. For many parts of the state on average, the first frost oftentimes occurs around mid-September and the latest frost date is around the end of May.

## Recommend trees and injury prevention

A list of hardy landscape trees in Wyoming can be found in the University of Wyoming Extension publication called “Landscaping: Recommended Trees for Wyoming” ([bit.ly/wyotrees](http://bit.ly/wyotrees)). Native and ornamental species included in the list have proven tough enough for Wyoming. Thick-barked trees (such as ponderosa pine and burr oaks) can be a good bet when planting replacement trees. The cork cambium layer just inside the bark acts as an insulator for the tree.

While many are proven tough, evergreen trees can suffer winter desiccation from cold temperatures, blowing wind, and lack of winter moisture due to the retention of leaves (needles) and respiration. This is why watering these trees during the winter is important when the ground is not frozen, making water available to roots. An anti-desiccant can be applied to evergreens in late fall to help limit water loss from respiration.

Other tips for helping trees survive the winter include mulching and proper timing of pruning and fertilization. Mulch can act as an insulator for roots and soil and can help maintain soil moisture levels. Avoid pruning and fertilization late in the growing season (so new growth isn't encouraged, which is more susceptible to damage).

Another great resource for homeowners is the "Wyoming Tree Owner's Manual" that has comprehensive information about trees and general guidelines for homeowner tree care. See [bit.ly/wyotreemanual](http://bit.ly/wyotreemanual).

Choose trees with the appropriate hardiness zones and from the recommended tree list through the University of Wyoming Extension.

By taking into consideration some winter tree care tips, you will help your trees survive extreme Wyoming weather.

All publications referenced above can be found on the *Barnyards & Backyards* website by going to [barnyardsandbackyards.com](http://barnyardsandbackyards.com) and clicking on Landscaping.

**Tara Costanzo** is the community resource forester with the Wyoming State Forestry Division. She can be reached at (307) 777-3626 or [tara.costanzo@wyo.gov](mailto:tara.costanzo@wyo.gov).

